Photocoupler

KODENSHI

PC-17T1 • PC-17T2 • PC-17T4

These Photocouplers consist of a Gallium Arsenide Infrared Emitting Diode and a Silicon NPN Phototransistor per a channel

The PC-17T1 has one channel in a 4-pin DIP package
The PC-17T2 has two channels in a 8-pin DIP package
The PC-17T4 has four channels in a 16-pin DIP pack

FEATURES

- Small Package Size
- Collector-Emitter Voltage : Min.35V
- Current Transfer Ratio : Min.50% (at I_F=5mA, V_{CE}=5V)
- Electrical Isolation Voltage : AC2500V_{rms}
- UL Recognized File No. E107486

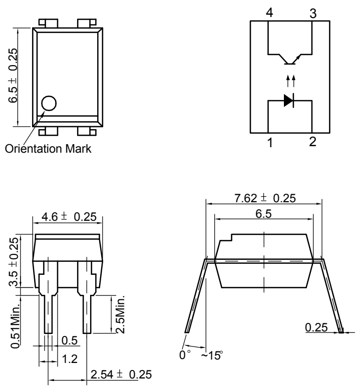
APPLICATIONS

- Interface between two circuits of different potential
- Vending Machine, Cordless Phone, Key Phone, Fax, Motor Control
- Programmable Logic Control
- Power Supply
- Computer Terminals

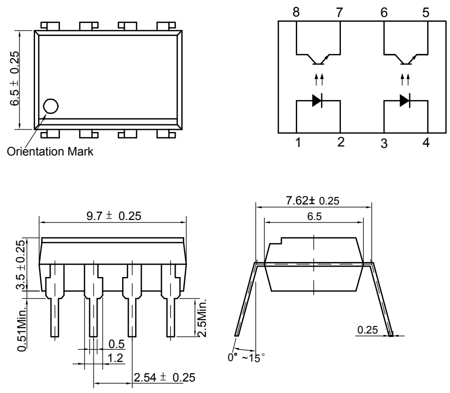
DIMENSION

(Unit : mm)

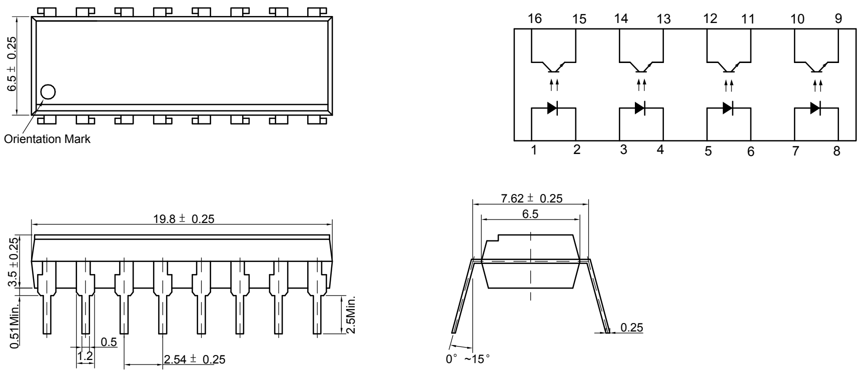
PC-17T1



PC-17T2



PC-17T4



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MAXIMUM RATINGS (Ta=25℃)

Parameter		Symbol	Rating	Unit
Input	Forward Current	I_F	50	mA
	Reverse Voltage	V_R	5	V
	Peak Forward Current*1	I_{FP}	1	A
	Power Dissipation	P_D	70	mW
Output	Collector-Emitter Breakdown Voltage	BV_{CEO}	35	V
	Emitter-Collector Breakdown Voltage	BV_{ECO}	6	V
	Collector Current	I_C	50	mA
	Collector Power Dissipation	P_C	150	mW
Input to Output Isolation Voltage*2		V_{iso}	AC2500	V_{rms}
Storage Temperature		T_{stg}	-55~+125	℃
Operating Temperature		T_{opr}	-30~+100	℃
Lead Soldering Temperature*3		T_{sol}	260	℃
Total Power Dissipation		P_{tot}	200	mW

*1. Input current with 100㎲ pulse width, 1% duty cycle

*2. Measured at RH=40~60% for 1min

*3. 1/16 inch form case for 10sec

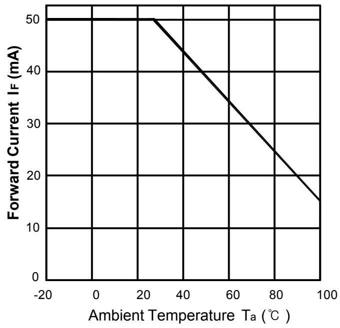
ELECTRO-OPTICAL CHARACTERISTICS (Ta=25℃, unless otherwise noted)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit.
Input	Forward Voltage	V_F	I_F=10mA	-	1.15	1.30	V
	Reverse Current	I_R	V_R=5V	-	-	10	㎂
	Capacitance	C_T	V=0, f=1MHz	-	30	-	pF
Output	Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=0.5mA	35	-	-	V
	Emitter-Collector Breakdown Voltage	BV_{ECO}	I_E=0.1mA	6	-	-	V
	Collector Dark Current	I_{CEO}	I_F=0, V_{CE}=24V	-	-	100	nA
	Capacitance	C_{CE}	V_{CE}=0, f=1MHz	-	10	-	pF
Coupled	Current Transfer Ratio*4	CTR	I_F=5mA, V_{CE}=5V	50	-	600	%
	Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_F=5mA, I_C=1mA	-	0.15	0.4	V
	Input-Output Capacitance	C_{IO}	V=0, f=1MHz	-	1	-	pF
	Input-Output Isolation Resistance	R_{IO}	RH=40~60%, V=500V	-	10^{11}	-	Ω
	Rise Time	tr	V_{CE}=5V, R_L=100Ω	-	4	-	㎲
	Fall Time	tf	I_C=2mA	-	4	-	㎲

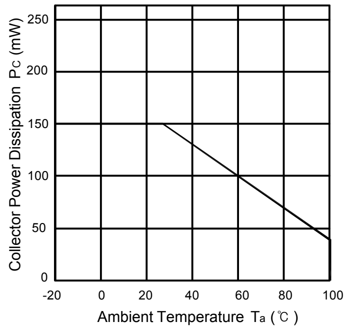
*4. CTR=(I_C/I_F) X 100 (%)

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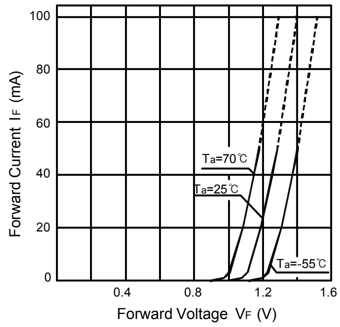
Forward Current vs. Ambient Temperature



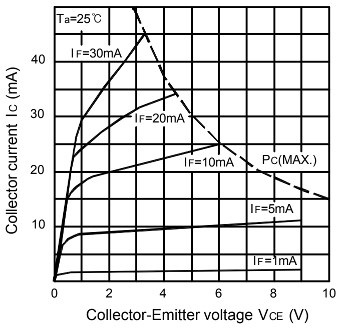
Collector Power Dissipation vs. Ambient Temperature



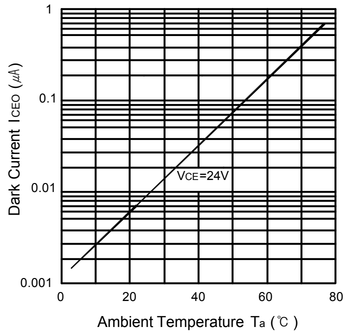
Forward Current vs. Forward Voltage



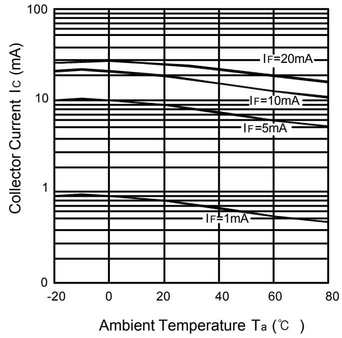
Collector Current vs. Collector-Emitter Voltage



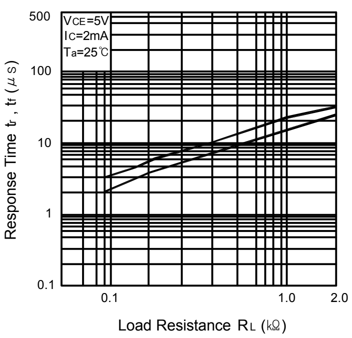
Dark Current vs. Ambient Temperature



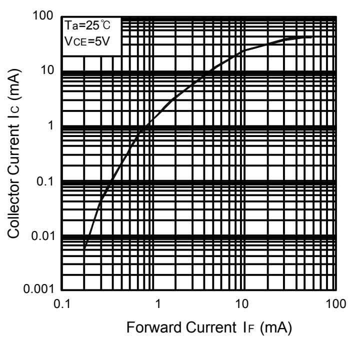
Collector Current vs. Ambient Temperature



Response Time vs. Load Resistance



Collector Current vs. Forward Current



Switching Time Test Circuit

